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09/447,077	11/22/1999	DANA C. BOOKBINDER	16-6-1	3342
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CORNING INCORPORATED			EXAMINER	
SP-TI-3-1 CORNING, NY 14831			MARKHAM, WESLEY D	
			ART UNIT	PAPER NUMBER
			1762	20
			DATE MAILED: 05/19/2003	20

Please find below and/or attached an Office communication concerning this application or proceeding.

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#### **DETAILED ACTION**

### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application as paper #17 on 3/18/2003 (with a certificate of mailing dated 3/13/2003) after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action (i.e., the final Office Action, paper #12, mailed on 9/26/2002) has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/2003 has been entered.

### Response to Amendment

2. Acknowledgement is made of applicant's amendment C, filed as paper #18 on 3/18/2003 (with a certificate of mailing dated 3/13/2003), in which Claims 1, 10 – 12, and 27 – 29 were amended, and Claims 3, 5 – 9, 13, 15, 22 – 26, 30, and 31 were canceled. Claims 1, 2, 4, 10 – 12, 14, 16 – 21, 27 – 29, and 32 – 58 are currently pending in U.S. Application Serial No. 09/447,077, with Claims 34 – 49 withdrawn without traverse from further consideration by the examiner as being drawn to a non-elected invention. An Office Action on the merits follows.

#### Information Disclosure Statement

3. Acknowledgement is made of the IDS filed by the applicant as paper #19 on 3/18/2003 (with a certificate of mailing dated 3/13/2003). The references listed

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thereon have been considered by the examiner as indicated on the attached copy of the PTO-1449 form.

## **Drawings**

4. Acknowledgement is made of the formal drawings (2 figures, 2 sheets) submitted by the applicant with paper #13 on 12/2/2002 (with a certificate of mailing dated 11/26/2002). These formal drawings are approved by the examiner.

## Specification

5. The examiner notes that, in the examination of this application, the term "a (silicacontaining) article used in the manufacture of an optical fiber" has been interpreted to exclude the optical fiber itself after it has been drawn from a given preform. The term has also been reasonably interpreted to exclude articles such as, for example, glass windows and/or sheets which are not / cannot be "used in the manufacture of an optical fiber".

# Claim Objections

6. The objections to Claims 1, 3, 8, 9, 13, 25, and 26, set forth in paragraphs 7 – 8 of the previous Office Action, are withdrawn in light of applicant's amendment C, in which a typographical error in Claim 1 was corrected, and Claims 3, 8, 9, 13, 25, and 26 were canceled.

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7. Claims 32 and 33 are objected to because of the following informalities: The phrase, "prior to to the step of ablating" in line 5 of Claim 32 and line 4 of Claim 33 appears to contain a typographical error. The applicant is suggested to amend the phrase in each of the aforementioned claims to read, "prior to the step of ablating" (i.e., to delete the second "to"). Appropriate correction is required.

8. Applicant is advised that should Claims 10 and 12 be found allowable, Claims 27 and 29, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. The rejection of Claims 15 and 31 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement because the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, set forth in

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paragraph 10 of the previous Office Action, is withdrawn in light of applicant's amendment C, in which Claims 15 and 31 were canceled.

## Claim Rejections - 35 USC § 103

- 11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
- 13. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. (JP 02-258643 A) in view of Swidler (USPN 6,124,044).
- 14. Tsuji et al. teaches all the limitations of Claim 53 as set forth in paragraphs 7 8 of the non-final Office Action (paper #7, mailed on 1/17/2002), except for a method wherein the protective layer comprises an <u>alkyl ammonium compound</u>, an <u>aryl</u>

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ammonium compound, or a wax. However, Tsuji et al. does teach coating a silicacontaining article used in the manufacture of an optical fiber with a resin layer such as a polyester system, polyacryl system, polyvinyl system, polyurethane system, silicone system, etc. to prevent dust and dirt from contaminating the silicacontaining article (i.e., preform) (page 5). Further, it is important that, after the resin layer of Tsuji et al. is peeled-off, no residual resin be present on the preform (page 6). Swidler teaches that, in the art of depositing peelable (i.e., removable) polyvinyl / acrylic resin protective coatings on the surface of a glass substrate to protect the glass during fabrication or transit (i.e., a process analogous to that of Tsuji et al.), it is desirable to add releasing agents that include, but are not limited to, waxes to the coating in order to facilitate the peelability of the film (Abstract, Col.1, lines 28 – 33, Col.2, lines 10 – 23 and 53, Col.3, lines 40 – 42, and Col.4, lines 61 – 67). Therefore, it would have been obvious to one of ordinary skill in the art to add a wax to the coating composition of Tsuii et al. with the reasonable expectation of successfully formulating a protective coating with improved peelability so that, when the protective coating is peeled off, no residual resin is left on the preform (i.e., due to the improved release properties of the coating provided by the wax compound) as desired by Tsuji et al.

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15. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. (JP 02-258643 A) in view of Swidler (USPN 6,124,044), and in further view of Brack (USPN 4,218,294).

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16. The combination of Tsuji et al. and Swidler teaches all the limitations of Claim 50 as set forth above in paragraph 14, except for a method wherein the protective layer comprises a silane. However, the combination of Tsuji et al. and Swidler reasonably suggests adding a releasing agent to the coating of Tsuji et al. in order to provide a protective coating with improved peelability so that, when the protective coating is peeled off, no residual resin is left on the preform (i.e., due to the improved release properties of the coating provided by the releasing agent) as desired by Tsuji et al. (see paragraph 14 above). The releasing agent taught by Swidler includes, but is not limited to, a wax (Col.4, lines 61 – 67). Brack teaches that, in the art of producing polymeric release coatings (i.e., a process analogous to that of Tsuji et al. and Swidler), it is desirable to add an oily or waxy material such as a silane or a wax to the polymeric coating composition so that release properties of the coating are improved (Col.1, lines 57 - 65, and Col.5, lines 21 - 39). In other words, Brack teaches the functional equivalence of (1) an oily silane material and (2) a wax as releasing agents that can be added to a polymeric coating composition to improve the release properties of the coating. Therefore, it would have been obvious to one of ordinary skill in the art to add a silane to the resin coating compositions of Tsuji et al. with the reasonable expectation of successfully formulating a protective coating that, when peeled off, leaves no residual resin on the preform (i.e., due to the improved release properties of the coating provided by the silane compound) as desired by Tsuji et al. In other words, it would have been obvious to one of ordinary skill in the art to substitute a silane compound (as taught by Brack) for a wax (as

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taught by Swidler) as a functionally equivalent releasing agent in the peelable coating of Tsuji et al. with the reasonable expectation of success and obtaining similar results (i.e., successfully and advantageously improving the release properties of the coating of Tsuji et al., regardless of whether a silane compound or a wax is utilized as the releasing agent).

- 17. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. (JP 02-258643 A) in view of Swidler (USPN 6,124,044), in further view of Brack (USPN 4,218,294), and in further view of Oomen (USPN 5,534,748).
- 18. The combination of Tsuji et al., Swidler, and Brack teaches all the limitations of Claims 51 and 52 as set forth above in paragraph 16, except for a method wherein the silane is at least one of a hydrocarbon silane and a fluorocarbon silane (Claim 51) or at least one of epoxy functional silanes, acrylate functional silane, amine functional silane, thiol functional silane, and phenyl functional silane (Claim 52). However, Brack teaches a silane in general and does not appear to be overly concerned with the exact silane chosen, so long as it is lipophilic (i.e., fat loving, i.e., hydrophobic) (Col.1, lines 62 65). Oomen teaches that the specific silanes claimed by the applicant are hydrophobic and are known as additives to coating solutions (Col.6, lines 12 20). Therefore, it would have been obvious to one of ordinary skill in the art to choose one or more of the specific silanes taught by Oomen for utilization in the process of the combination of Tsuji et al., Swidler, and Brack with the reasonable expectation of successfully and advantageously

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producing a resin film that, when peeled off the silica-containing preform of Tsuji et al., leaves no residual resin on the preform (i.e., by choosing a specific silane (i.e., the silanes taught by Oomen) out of the genus of silanes taught generally by Brack).

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- 19. Claims 54 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. (JP 02-258643 A) in view of Woodhall et al. (USPN 5,739,191).
- 20. Tsuji et al. teaches all the limitations of Claims 54 57 as set forth in paragraphs 7 and 8 of the non-final Office Action (paper #7, mailed on 1/17/2002), except for a method wherein the protective layer is at least partially removed by washing during subsequent processing of the silica-containing article (Claim 54), the washing is accomplished with water or a solvent (Claim 55), and the protective layer is a watersoluble polymer (Claim 56), particularly polyvinyl alcohol or hydroxymethylcellulose (Claim 57). However, it is the objective of Tsuji et al. to coat a silica-containing (i.e., glass) article used in the manufacture of an optical fiber with a removable / peelable resin layer such as a polyvinyl system to prevent dust and dirt from contaminating the silica-containing article (i.e., preform). Woodhall et al. teaches that it was known in the art of removable protective coatings at the time of the applicant's invention to coat a glass article with polyvinyl alcohol (i.e., a water soluble polymer) to temporarily protect the article during subsequent processing operations, and then to remove the material (i.e., the polyvinyl alcohol) from the article with a water wash or by peeling, or by a combination of the two (Abstract, Col.1, lines 28 and 32 - 35, and Col.2, lines 28 - 33). It would have been obvious to one of ordinary skill in the

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art to utilize the temporary protection process / polyvinyl alcohol composition of Woodhall et al. to protect the glass article of Tsuji et al. with the reasonable expectation of (1) success, as Woodhall et al. teaches that their process is suitable for temporarily protecting glass articles, and (2) obtaining the benefits of utilizing the process of Woodhall et al., such as providing a protective film that adheres well to the surface to be protected, with few or no pinholes, and providing a film that can be easily removed with a water wash (Col.2, lines 28 – 33). Please note that Woodhall et al. also teaches the functional equivalence of removing temporary protective films by washing and by peeling (i.e., the removal method taught by Tsuji et al.).

## Double Patenting

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969). A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with

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this application. See 37 CFR 1.130(b). Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1, 2, 4, 11, 12, 16, 18 – 21, 28, 29, 32, 50 – 55, and 58 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 – 6, 8 – 11, 16, and 19 – 29 (i.e., all the pending claims) of copending Application No. 09/569,562. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 1 – 6, 8 – 11, 16, and 19 – 29 of copending Application No. 09/569,562 teach all the limitations of Claims 1, 2, 4, 11, 12, 16, 18 – 21, 28, 29, 32, 50 – 55, and 58 of the instant application in addition to teaching other process steps, such as shipping the coated silica-containing article from one factory to another for further processing. Since Claims 1 – 6, 8 – 11, 16, and 19 – 29 of copending Application No. 09/569,562 teach all the limitations of Claims 1, 2, 4, 11, 12, 16, 18 – 21, 28, 29, 32, 50 – 55, and 58 of the instant application, one of ordinary skill in the art would have been motivated to perform the claimed process of the instant application. With regards to Claims 11 and 28 of the instant application, please note that the silane compounds taught by Claim 16 of Application No. 09/569,562 necessarily form a self-assembled monolayer when directly applied to a silicacontaining article.

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23. Claims 17 and 33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 – 6, 8 – 11, 16, and 19 – 29 of copending Application No. 09/569,562 (as set forth in paragraph 22 above) in view of Tsuji et al. (JP 02-258643 A).

- 24. Specifically, Claims 1 6, 8 11, 16, and 19 29 of copending Application No. 09/569,562 teach all the limitations of Claims 17 and 33 of the instant application, except a method in which the silica-containing article coated with the protective layer is a glass tube used in an inside vapor deposition process. However, Claims 1 6, 8 11, 16, and 19 29 of copending Application No. 09/569,562 do teach coating an optical fiber preform in general for protection. Tsuji et al. teaches coating a glass tube used in an inside vapor deposition process with a protective coating (page 2, Conventional Technology, and page 5). Tsuji et al. also teaches that the protective coating protects the preform from dust and dirt, which cause problems in later optical fiber processing steps. Therefore, it would have been obvious to one of ordinary skill in the art to use the protective layer of Claims 1 6, 8 11, 16, and 19 29 of copending Application No. 09/569,562 to protect a glass tube used in an inside vapor deposition process with the reasonable expectation of advantageously protecting the tube from dust and dirt, as taught by Tsuji et al.
- 25. These are <u>provisional</u> obviousness-type double patenting rejections because the conflicting claims have not in fact been patented.

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## Allowable Subject Matter

- 26. Claims 10, 14, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Please also see paragraph 8 above for further information on Claim 27 (i.e., as a duplicate claim).
- 27. Please note that no prior art has been applied against Claims 1, 2, 4, 10 12, 14, 16 21, 27 29, 32, 33, and 58. Independent Claims 1 (from which Claims 2, 4, 10 12, 14, 16 21, 27 29, 32, and 33 depend) and 58 require that the protective layer coated on the silica-containing article / preform used to manufacture an optical fiber be organic, particulates be removed from the protective layer by cleaning, and the protective layer by ablated (i.e., removed) by heating during subsequent processing of the silica-containing article (e.g., fiber drawing). The prior art of record, alone or in combination, does not teach or reasonably suggest all of the aforementioned claim limitations in the context of independent Claims 1 and 58.

# Response to Arguments

- 28. The applicant's arguments filed on 3/18/2003 have been fully considered but are not persuasive.
- 29. Specifically, the applicant's arguments drawn to the combination of Tsuji et al. and Brack have been rendered moot in view of the new grounds of rejection presented above. To the extent that the applicant's arguments are still relevant to the new grounds of rejection, please see paragraphs 5 6 of the Advisory Action (paper

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#15, mailed on 1/30/2003) in which the combination of Tsuji et al. and Brack is discussed at length.

30. Regarding Claims 54 – 57, the applicant argues that Tsuji does not teach the use of a polyvinyl alcohol coating, and there is no suggestion or motivation in Woodhall to use a coating on an optical fiber article. In response to applicant's arguments against the references individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Briefly, please note that it is the objective of Tsuji to coat a silica-containing (i.e., glass) article used in the manufacture of an optical fiber with a removable / peelable resin layer such as a polyvinyl system to prevent dust and dirt from contaminating the silica-containing article (i.e., preform). Woodhall teaches that it was known in the art of removable protective coatings at the time of the applicant's invention to coat a glass article with polyvinyl alcohol (i.e., a water soluble polymer) to temporarily protect the article during subsequent processing operations, and then to remove the material (i.e., the polyvinyl alcohol) from the article with a water wash or by peeling, or by a combination of the two (Abstract, Col.1, lines 28 and 32 - 35, and Col.2, lines 28 -33). It would have been obvious to one of ordinary skill in the art to utilize the temporary protection process / polyvinyl alcohol composition of Woodhall to protect the glass article of Tsuji with the reasonable expectation of (1) success, as Woodhall teaches that the process is suitable for temporarily protecting glass

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articles, and (2) obtaining the benefits of utilizing the process of Woodhall, such as providing a protective film that adheres well to the surface to be protected, with few or no pinholes, and providing a film that can be easily removed with a water wash (Col.2, lines 28 – 33). Please note that Woodhall also teaches the functional equivalence of removing temporary protective films by washing and by peeling (i.e., the removal method taught by Tsuji). Although Tsuji does teach a peelable protective film, this is not the crux of the invention of Tsuji. The crux of the invention of Tsuji lies in providing a protective coating for a silica-containing article used in the manufacture of an optical fiber that can be removed at an appropriate point in the manufacturing process. As such, one of ordinary skill in the art would have at the very least recognized substituting the temporary protective film / removal method (i.e., washing) of Woodhall for the temporary protective film / removal method (i.e., peeling) of Tsuji as a substitution of equivalents that would have led to similar results (i.e., successfully protecting a silica-containing article used in the manufacture of an optical fiber with a removable coating, as desired by Tsuji). In addition, a pinhole-free coating such as the one taught by Woodhall would have clearly been desirable in the process of Tsuji so as to provide complete protection of the silica-containing article.

31. In response to the applicant's argument that it would only have been "obvious to try" the method taught in Woodhall on the silica-containing article of Tsuji, the examiner has clearly set forth the reasons for combining the teachings of Tsuji with Woodhall (see paragraph 30 above). Please note that the test of obviousness is not an

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express suggestion of the claimed invention in <u>any or all references</u>, but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them (*In re Rosselet*, 146 USPQ 183).

#### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Foster et al. (USPN 6,233,972 B1) teaches a method of providing a temporary protective polyvinyl alcohol coating on a glass sheet and then removing the coating by rinsing in hot water. However, there is no suggestion in Foster et al. that the glass sheet is or can be utilized in the manufacture of an optical fiber. Sirejacob (USPN 6,379,448 B1) teaches a method of depositing a water-repellent layer of a fluoro aliphatic silane on a siliceous substrate such as a glass sheet, a wineglass, and an optical fiber. However, there is no suggestion in Sirejacob that the siliceous substrates are or can be utilized in the manufacture of an optical fiber. Siegmund (USPN 4,175,940) teaches a method of depositing a removable layer of leachable glass around a multi-fiber preform. Bookbinder et al. (USPN 5,450,513) teaches a method of depositing a silane compound on a silica glass tube used as a coupler body for manufacturing an optical waveguide coupler. However, there is no suggestion in Bookbinder et al. that the silica glass tube is or can be utilized in the manufacture of an optical fiber itself (i.e., not an optical fiber component such as a coupler). Please note that the aforementioned references have been cited to further clarify the examiner's

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interpretation of the scope of the applicant's claims, especially the limitation "used in the

manufacture of an optical fiber".

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Wesley D Markham whose telephone number is (703)

308-7557. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30

PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9310

for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 308-

0661.

Wesley D Markham

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Examiner

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₩DM May 14, 2003

SKRIVE P. BECK

SUPERVISORY PATENT EXAMINER

TECHNOLICY CENTER 1700